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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,332	09/18/2000	Noriya Hayashi	001195	4422

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EXAMINER

SELLERS, ROBERT E

ART UNIT	PAPER NUMBER
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1712

13

DATE MAILED: 09/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/664,332

Applicant(s)

HAYASHI, NORIYA

Examiner

Robert Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-10, 12 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) 9, 17-19, 21 and 23-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

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Claims 9, 21 and 23-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8. New claim 26 requires an arylsulfonium salt of Formula (IV) wherein X^+ is AsF_6^+ which does not correspond to the elected anion of SbF_6^- (Election filed March 6, 2002, Paper No. 8, page 2, item (2)).

The information disclosure statement filed 25 April 2002 (Paper No. 10) fails to comply with 37 CFR 1.97(c) because it lacks the fee set forth in 37 CFR 1.17(p). It has been placed in the application file, but the information referred to therein has not been considered. The filing date of 25 April 2002 is after the mailing date of the Office action of 24 April 2002.

The 35 U.S.C. 112, first paragraph, rejection is rescinded since U.S. Patent No. 6,376,070 employs the disclosed Sun Aid tradenames for the arylsulfonium salts.

The 35 U.S.C. 112, second paragraph, rejection is withdrawn because claim 3 wherefrom claim 7 is dependent has been amended to depend from claim 2 which provides the antecedent basis for the curing accelerator.

The 35 U.S.C. 102(b) rejection over Green has been overcome by the incorporation of the limitations of claim 16 into claim 1.

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The text of section 103 of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 6-8, 10, 12, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamazu et al., Buchwalter et al., Ohnishi, Starkey and Green (et al.) Patent Nos. 4,299,938 and 4,252,592.

The rejection is maintained for the reasons of record set forth in the previous Office action. The arguments filed August 26, 2002 have been considered but are unpersuasive.

Hamazu et al. (col. 5, lines 11-14) is open to the presence of "one or more auxiliaries" including acid anhydrides. Buchwalter et al. discloses a cyclic anhydride such as the elected species of maleic anhydride (col. 6, lines 60-65) which is a curing agent for the epoxy resin and is distinct from the Lewis acid catalyst (col. 6, lines 50-54, "the composition also contains a Lewis acid catalyst such as . . . , **and** a cyclic anhydride [emphasis added]."). Polyethylene glycol is incorporated "as a thickener or flexibilizer to improve film-forming properties (col. 7, lines 6-7 and 12)." Ohnishi (col. 5, line 17) embraces curing agents. Starkey espouses a mixture of an alicyclic acid anhydride such as maleic anhydride (col. 20, lines 10-13 and 38-39) with a polyol such as polyethylene glycol (col. 7, line 31) which adjusts the molecular weight and controls the degree of crosslinking (col. 3, lines 32-34). Green et al. '938 (col. 12, lines 17-19; col. 7, lines 67-68 and col. 8, lines 14-15) teaches a combination of an acid anhydride crosslinking agent and a polyethylene glycol co-curing agent. Green '592 (col. 4, lines 16-17) encompasses an acid anhydride curing agent.

It would have been obvious to incorporate the polyethylene glycol of Buchwalter et al., Starkey and Green et al. '938 with the curing agents of Hamazu et al., Ohnishi and Green '592 in order to thicken or flexibilize the compositions to improve the film-forming properties (Buchwalter et al.) and to adjust the molecular weight and control the degree of crosslinking (Starkey).

According to MPEP § 2144 under the heading "RATIONALE DIFFERENT FROM APPLICANT'S IS PERMISSIBLE", "It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant (*In re Linter*, 173 USPQ 560, CCPA 1972; and *In re Dillon*, 16 USPQ2d 1897, 1901, "it is not necessary in order to establish a *prima facie* case of obviousness that . . . there be a suggestion in or expectation from the prior art that the claimed compound or composition will have the same or a similar utility as one newly discovered by applicant.").

Although the polyethylene glycol of Buchwalter et al., Starkey and Green et al. '938 is not utilized for the claimed purpose as a curing accelerator, its combination with the curing agents of Hamazu et al., Ohnishi et al. and Green '592 is sufficient to establish a *prima facie* case of obviousness based on the specific advantages mentioned in Buchwalter et al. and Starkey.

Buchwalter et al. recognizes the role of an acid anhydride as a curing agent for a cycloaliphatic diepoxide which is within the ambit of the claimed composition regardless of its intended utility as a positive-acting photoimaging formulation. The blends of both Buchwalter et al. and applicants result in anhydride cured epoxy resins in the presence of an arylsulfonium salt.

The claims do not require the curing of the composition in the presence of a sulfonium salt by irradiation with an energy ray or curing in the presence of a curing agent without irradiation of an energy ray. The claim language merely denotes the capability of the composition to be cured with irradiation of an energy ray and without it using a curing agent. Ohnishi (col. 4, lines 51-52 and col. 8, lines 20-25), Green et al. '938 (col. 5, lines 14-22) and Green '592 (col. 5, line 66 to col. 6, line 1) acknowledge that blends of epoxy resins, acid anhydride curing agents and sulfonium salt photopolymerization initiators cure by both irradiation and heat.

It is recognized that the prior art compositions possess the capability of curing by means of both irradiation and heat due to the presence of a sulfonium salt photoinitiator together with an acid anhydride heat-activated curing agent. The claims do not distinguish over the sequential irradiation and heat-curing mechanism described in Green et al. '938 (col. 11, lines 55-63).

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

(703) 308-2399 (Fax no. (703) 872-9311)
Monday to Friday from 9:30 to 6:00 EST



Robert Sellers
Primary Examiner
Art Unit 1712

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8/30/02